

Title: **BOAT OPERATING PROCEDURES**

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## **1.0 OBJECTIVE**

This procedure outlines minimum qualifications and protocols for proper boat operation and storage by personnel of the Ecotoxicology Branch. All captains should be aware that details this SOP provide are guidelines and that situations will arise which will demand clear thinking and precise actions not specifically mentioned herein.

## **2.0 HEALTH AND SAFETY**

A minimum of two people is required in the vessel during operation. Every occupant of a boat must have a personal floatation device (PFDs). As per U.S. Coast Guard regulations, all boats must carry the proper safety equipment (listed in section 4.0). All required trailer and boat lights should work properly. Personnel should wear sturdy footwear when taking boat on and off trailer. Care must be taken at all times to comply with the loading capacity of the vessel. A float plan should be filled out and hung in an appropriate area before leaving the lab. Local forecasted climatological conditions must be checked (several websites listed in Section 7.0). No on-water operations should occur during a small craft advisory. A communication device, preferably a working VHF radio, should be aboard for all on-water operations.

## **3.0 PERSONNEL/TRAINING/RESPONSIBILITIES**

Personnel in charge of boat operation should have completed and passed the South Carolina Department of Natural Resources Boating Safety Course (available online from the South Carolina state web page [www.state.sc.us](http://www.state.sc.us)) or equivalent boating instruction. Additionally, personnel in charge of boat operation should have been observed properly captaining a laboratory boat at least three times by a qualified employee of the laboratory.

## **4.0 REQUIRED AND RECOMMENDED MATERIALS**

### **4.1 Required Safety Equipment – Boats 16’ to 40’ length over all (LOA)**

One throwable Personal Flotation Device (Type IV PFD)  
One wearable PFD **PER PERSON** on board  
At least three up to date day-use and three night-use pyrotechnic signals (three day/night emergency flares sufficient)  
One Type B-I fire extinguisher (26’ to 40’ requires B-II)  
Stern, Side, and Masthead Lights (on when under power in low visibility)  
All-round light (on when at anchor in low visibility)

### **4.2 Required Safety Equipment – Boats less than 16’ length LOA**

One wearable PFD **PER PERSON** on board  
One Type B-I fire extinguisher  
Stern and Side Lights (on when under power in low visibility)  
All-round light (on when at anchor in low visibility)

### **4.3 Recommended Equipment**

Type IV PFD on boats < 16’ LOA with gas motor  
Anchor with sufficient rope  
Working VHF radio or cell phone  
Depth sounder  
Compass  
Well stocked First-Aid kit  
Lanyard style engine cutoff switch

## **5.0 PROCEDURE**

### **5.1 Trailering**

- Connect trailer to appropriate size ball, cross and secure safety chains, and fully connect wire harness for trailer lights.
- Ensure trailer lights are functioning properly.
- Inspect trailer straps and tighten if necessary.
- Trim engine up and place on stands for transporting trailer. Small engines without electronic/hydraulic trim should be fastened so that engine foot is not in danger of hitting the ground during transportation.
- Be aware of large turning radius.
- Allow sufficient breaking distance.

- Ensure that water plug is removed whenever the boat is out of the water, unless the boat is equipped with sufficient scuppers.

## **5.2 Launching and Docking**

### **5.2.1 Launching**

- Make ready in appropriately marked area or, if no area is marked, out of the way of other trailering and launching boats.
- Place all safety equipment on boat before going aboard.
- Secure water plug in hull.
- Remove trailer straps.
- Ensure bearing buddies are on all hubs.
- Turn on or attach leads to batteries and take engine off stands, if applicable.
- Leave engine trimmed up until boat is off trailer and in sufficiently deep water to prevent the engine foot from hitting hard surfaces.
- Always have someone attend boat while parking the towing vehicle.
- Start engine and allow to achieve steady idle before pushing off of dock/mooring/ramp.
- If present, turn on electronic piloting equipment (e.g. VHF radio, depth sounder, GPS), before leaving dock.

### **5.2.2 Docking**

- Approach dock or ramp at idle speed.
- Allow plenty of room and time for other boaters to make their way into or off dock/ramp.
- Note water and wind speed and direction.
- Note surrounding structures, boats, and topography.
- Usually, docking with bow facing into water current will provide better steerage.

## **5.3 On-water Operation**

- Captain should familiarize him/herself with the area via navigational charts or communication with boaters already well familiar with the area.
- Captains should approach and navigate unknown waters with caution.
- Follow proper boat operating procedures (Maloney and Chapman, 1999). If possible, carry NOAA navigational chart of area.
- Follow all navigational markers and obey all no wake zones strictly.
- Use navigational lights whenever visibility is reduced and mooring lights whenever on anchor.
- Use depth sounder and compass to navigate, in addition to navigation markers.

## **5.4 Treatment of Boat and Supplies Before Storage**

- Upon return to lab or overnight parking, the boat hull, deck, and cabin (if present) as well as the trailer should be rinsed with tap water. Any mud or growth should be scrubbed off.
- All loose materials (e.g. PFD's, push-poles, sampling gear and clothing) that need to be stored should be removed from the boat, rinsed with tap water if they have contacted salt water, and stored properly.
- Batteries permanently stored on-board should be turned off or disconnected.

## **5.5 Maintenance and Storage**

### 5.5.1 Engine Maintenance

- Flush engine in trimmed down position with tap water upon return to laboratory.
- Always trim engine down for storage.
- Check spark plugs regularly and replace as needed.
- Replace foot oil yearly.
- Run fuel out of engine if boat is expected to sit for greater than three months.

### 5.5.2 Trailer Maintenance

- Inject several ounces of saltwater grade bearing grease into hubs after approximately every 100 miles of trailering.
- Check wiring and lights before every use.
- Store in proper location, ensuring not to block access to any other boats or vehicles. Place blocks behind, and in front if necessary, of trailer wheels on both sides to prevent trailer from rolling.

### 5.5.3 Battery, Fuel, and Boat Maintenance

- Batteries not stored permanently on board should be placed on battery cart in room 410 after each use.
- **Never** store batteries on concrete.
- Measure battery voltage with 12v voltmeter before every use.
- Place gas jerry cans in fireproof cabinet. Ensure the can is vented.

## **5.6 Bass Boat**

### 5.6.1 Loading and Travel

- Tie bass boat securely into bed of pick-up truck.
- Take plug out of boat.
- Secure seats into boat.
- Do not place motor or battery in or on boat during travel.

#### 5.6.2 On-Water Use

- Put plug in boat prior to launching
- Set boat along water and put motor on transom.
- Place battery in boat forward enough such that the stern is not weighed down near waterline, usually below the seat of the person running the motor.
- Avoid leaning or placing excessive weight on either gunnel as boat capsizes easily.

#### 5.6.3 Storage

- Rinse thoroughly with tap water.
- Store such that water will not pool on the boat.
- Return battery and motor to proper storage areas.

## **6.0 QUALITY CONTROL/QUALITY ASSURANCE**

Not Applicable.

## **7.0 REFERENCES**

Maloney, E.S., and C.F. Chapman. 1999. Chapman Piloting : Seamanship & Boat Handling , 63rd ed. Hearst, Inc. New York, NY. 656 p.

Coast Guard website: [www.navcen.uscg.gov/lnm/d7](http://www.navcen.uscg.gov/lnm/d7) (subject to change) provides local notice to mariners. Published once weekly.